

REMARKS

Status of the Claims

Claims 1 and 4-9 are pending in the above-identified application. Claim 1 is currently amended. No new matter is being introduced in the amendment by way of this amendment. The amendment to claim 1 merely corrects a typographical error, and does not change the scope of the claim. Reconsideration and allowance of all of the pending claims is respectfully requested.

Claim Rejections - 35 U.S.C. §103

At page 2 of the Office Action, claims 1, and 4-9, are rejected under 35 U.S.C. §103(a) as unpatentable over Ichikawa '325 (U.S. Patent No. 6,582,325). For the following reasons, this rejection is respectfully traversed.

Distinctions between the Present Invention and Ichikawa '325

The cover of Ichikawa '325 is the reaction product of a thermoplastic polyurethane elastomer with dicyclohexylmethane-4,4'-diisocyanate. However, in the present invention, the cover is not a reaction product of thermoplastic polyurethane elastomer with thermoplastic polyisocyanate, but polyurethane itself. That is, in Ichikawa '325, the thermoplastic polyurethane elastomer that is used in the cover is additionally modified with a specific diisocyanate compound. However, in the present invention the thermoplastic polyurethane elastomer is not modified with such a diisocyanate. Therefore, Ichikawa '325 does not disclose or suggest the limitation of using nonionic cycloaliphatic diisocyanate as a base resin as recited in the present claim 1.

A thermoplastic polyurethane elastomer is a product of a polyol, diisocyanate and a chain extender. This is discussed in paragraph [0018] of the present specification, and in columns 2 and 3 of Ichikawa '325. However in Ichikawa '325, the thermoplastic polyurethane elastomer that is disclosed is a *modified* (or crosslinked) polyurethane thermoplastic elastomer. In Ichikawa '325 the polyurethane elastomer is reacted with dicyclohexylmethan-4,4'-diisocyanate. The present invention does not use a modified (crosslinked) polyurethane thermoplastic elastomer as disclosed in Ichikawa '325.

With regard to starting material for the thermoplastic polyurethane elastomer, Ichikawa '325 lists diisocyanates in column 3, lines 20-29, which include aromatic diisocyanate, aliphatic diisocyanate and alicyclic diisocyanate, but only xylene diisocyanate is given as an example of an alicyclic diisocyanate. See Column 3, line 27. However, xylene diisocyanate is not an alicyclic diisocyanate, but is an aromatic diisocyanate. Therefore, in fact Ichikawa '325 does not disclose or suggest the use of an alicyclic diisocyanate as a starting material for the thermoplastic polyurethane elastomer. In the examples and comparative examples of Ichikawa '325 there is no example of a thermoplastic polyurethane elastomer, which uses any diisocyanate other than an aliphatic isocyanate. The two Pandex elastomers mentioned in column 7 (see footnotes of Table 2) of Ichikawa '325 are produced from an aliphatic isocyanate.

In the present invention, the thermoplastic polyurethane elastomer is formed from nonionic alicyclic diisocyanate, and is not additionally modified with another polyisocyanate compound that is not recited, for example, in claim 1. Accordingly, the present invention is completely different from that disclosed in Ichikawa '325. In Ichikawa '325 the scuff resistance, when the thermoplastic polyurethane elastomer is formed into a golf ball cover is improved by

additional crosslinking with a specific diisocyanate compound. In fact, in Comparative Examples 2 and 3 of Ichikawa '325, the thermoplastic elastomer is not crosslinked with the diisocyanate compound and shows poor scuff resistance. See table 2, column 7 of Ichikawa '325. Therefore Ichikawa '325, in fact, teaches away from the present invention.

In the present invention, the abrasion resistance of the golf ball cover has good characteristics without additionally reacting it with a diisocyanate compound as in Ichikawa '325. This is because the thermoplastic polyurethane elastomer of the present invention is formed from "nonionic cycloaliphatic diisocyanate as a base resin" as recited in the present claim 1. This limitation is nowhere disclosed or suggested by Ichikawa '325.

In addition, Ichikawa '325 does not disclose or suggest a core that has a deformation amount of 2.5 to 4.5 mm when applying from an initial load of 98 N to a final load of 1275 N on the core, and the golf ball has a deformation amount of 2.4 to 4.0 mm, when applying from an initial load of 98 N to a final load of 1275 N on the golf ball, as presently claimed.

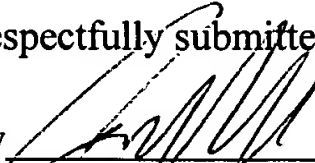
Therefore, since the prior art does not disclose all of the limitations of the present claims, it is respectfully submitted that claims 1, and 4-9, are presently allowable over the prior art. For the above reasons, it is respectfully suggested that this rejection should then be withdrawn.

Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance. If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at number below.

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Respectfully submitted,

By 

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